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WHAT IS CLAIMED IS:

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1. An antifibrillogenic agent for inhibiting amyloidosis and/or for cytoprotection, which comprises a peptide of Formula I, an isomer thereof, a retro or a retro-inverso isomer thereof or a peptidomimetic thereof:

Xaa₁-Xaa₂-Xaa₃-Xaa₄

Ι

wherein,

 Xaa_1 selected from the group consisting of Lys, Xaa_5 -Lys-;

 Xaa_s is selected from the group consisting of Lys, His-Gln-, His-His-Gln-, Val-His-His-Gln-, Glu-Val-His-His-Gln-, Asp-Asp-, Gln-;

Xaa, is any amino acid;

Xaa, is Val;

Xaa, is selected from the group consisting of Phe, Phe-NH₂, Phe-Phe, Phe-Phe-Ala, Phe-Phe-Ala-NH₂, Phe-Phe-Ala-Gln. Phe-Phe-Ala-Gln. Phe-Phe-Ala-Gln. Phe-Phe-Ala-Gln. Phe-Phe-Ala-Gln. Phe-Phe-Ala-Gln. Phe-Phe-Ala-Gln.

wherein said peptide has at least one [D] amino acid residue,

with the proviso that Lys-Lys-Leu-Val-Phe-Phe-Ala is an all-[D] peptide. $\fine \omega$

- 2. The antifibrillogenic agent of claim 1, wherein Xaa, is a hydrophobic amino acid residue.
- 3. The antifibrillogenic agent of claim 1, wherein the peptide of formula I has at least two [D] amino acid residues.
- 4. The antifibrillogenic agent of claim 1, wherein the peptide of formula I has at least three [D] amino acid residues.





- 5. The antifibrillogenic agent of claim 1, wherein the peptide of formula I has one [L] amino acid residue.
- 6. The antifibrillogenic agent of claim 1, wherein the peptide of formula I is an all-[D] isomer peptide.
- The antifibrillogenic agent of claim 1, 2, 3, 7. 5, or 6, wherein said peptide of Formula I is selected from the group consisting of: Lvs-Ile-Val-Phe-Phe-Ala (SEO ID NO:1); Lys-Lys-Leu-Val-Phe-Phe-Ala (SEQ ID NO:2); Lys-Leu-Val-Phe-Phe-Ala (SEQ ID NO:3); Lys-Phe-Val-Phe-Phe-Ala (SEQ ID NO:4); Ala-Phe-Phe-Val-Leu-Lvs (SEO ID NO:5); Lys-Leu-Val-Phe (SEO ID NO:6); Lvs-Ala-Val-Phe-Phe-Ala (SEQ ID NO:7); Lys-Leu-Val-Phe-Phe (SEO ID NO:8); Lvs-Val-Val-Phe-Phe-Ala (SEO ID NO:9); Lys-Ile-Val-Phe-Phe-Ala-NH, (SEO ID NO:10): Lys-Leu-Val-Phe-Phe-Ala-NH, (SEQ ID NO:11); Lys-Phe-Val-Phe-Phe-Ala-NH, (SEQ ID NO:12); Ala-Phe-Phe-Val-Leu-Lys-NH2 (SEQ ID NO:13); Lys-Leu-Val-Phe-NH2 (SEO ID NO:14); Lys-Ala-Val-Phe-Phe-Ala-NH, (SEO ID NO:15): Lys-Leu-Val-Phe-Phe-NH, (SEQ ID NO:16); Lys-Val-Val-Phe-Phe-Ala-NH2 (SEQ ID NO:17); Lys-Leu-Val-Phe-Phe-Ala-Gln (SEQ ID NO:18); Lys-Leu-Val-Phe-Phe-Ala-Gln-NH2 (SEO ID NO:19): His-His-Gln-Lys-Leu-Val-Phe-Phe-Ala-NH, (SEQ ID NO:20); His-His-Gln-Lys (SEQ ID NO:23); and

(SEQ ID NO:24).

Gln-Lys-Leu-Val-Phe-Phe-NH,

- 8. The antifibrillogenic agent of claim 1, wherein the peptide of formula I is a peptide as set forth in SEO ID NO:2 or SEQ ID NO:3.
- 9. A labeled conjugate for in vivo imaging of amyloid deposits, which comprises a conjugate of formula II:

A-B-C II

wherein A is an amyloid plaque-targeting moiety selected from the group consisting of a peptide of Formula I as defined in claim 1, an isomer thereof, a retro or a retro-inverso isomer thereof and a peptidomimetic thereof,

wherein B is a linker portion allowing attachment of the amyloid plaque-targeting moiety to C; and wherein C is a label that allows for said in vivo imaging.

- 10. The labeled conjugate of claim 9, wherein Xaa₂ in Formula I is a hydrophobic amino acid residue.
- 11. The labeled conjugate of claim 9, wherein the peptide of formula I has at least two [D] amino acid residues.
- 12. The labeled conjugate of claim 9, wherein the peptide of formula I has at least three [D] amino acid residues.
- 13. The labeled conjugate of claim 9, wherein the peptide of formula I has one [L] amino acid residue.
- 14. The labeled conjugate of claim 9, wherein the peptide of formula I is an all-[D] isomer peptide.



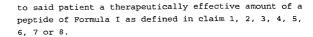
15.

The labeled conjugate of claim 9, 10, 11, 12, 13 or 14, wherein said peptide of Formula I is selected from the group consisting of:

(SEQ	ID	NO:1);
(SEQ	ID	NO:2);
(SEQ	ID	NO:3);
(SEQ	ID	NO:4);
(SEQ	ID	NO:5);
(SEQ	ID	NO:6);
(SEQ	ID	NO:7);
(SEQ	ID	NO:8);
(SEQ	ID	NO:9);
(SEQ	ID	NO:10);
(SEQ	ID	NO:11);
(SEQ	ID	NO:12);
(SEQ	ID	NO:13);
(SEQ	ID	NO:14);
(SEQ	ID	NO:15);
(SEQ	ID	NO:16);
(SEQ	ID	NO:17);
(SEQ	ID	NO:18);
(SEQ	ID	NO:19);
(SEQ	ID	NO:20);
(SEQ	ID	NO:23);
(SEQ	ID	NO:24).
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- The labeled conjugate of claim 15, wherein B is selected from the group consisting of Glucose and Phe.
- The labeled conjugate of claim 15, wherein C is 17. 99™Tc.
- A method for the treatment of amyloidosis disorders in a patient, which comprises administering





- 19. A method for the treatment of amyloidosis disorders in a patient, which comprises administering to said patient a therapeutically effective amount of an antifibrillogenic agent as defined in claim 1, 2, 3, 4, 5, 6, 7 or 8.
- 20. A composition for the treatment of amyloidosis disorders in a patient, which comprises a therapeutically effective amount of a peptide of Formula I as defined in claim 1, 2, 3, 4, 5, 6, 7 or 8 in association with a pharmaceutically acceptable carrier.
- 21. A composition for the treatment of amyloidosis disorders in a patient, which comprises a therapeutically effective amount of an antifibrillogenic agent as defined in claim 1, 2, 3, 4, 5, 6, 7 or 8 in association with a pharmaceutically acceptable carrier.
- 22. A composition for in vivo imaging of amyloid deposits, which comprises a therapeutically effective amount of a labeled conjugate as defined in claim 9, 10, 11, 12, 13, 14, 15, 16 or 17 in association with a pharmaceutically acceptable carrier.
- 23. Use of a peptide of Formula I as defined in claim 1, 2, 3, 4, 5, 6, 7 or 8 for inhibiting amyloidosis and/or for cytoprotection.



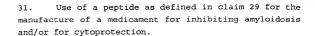


amyloidosis and/or for cytoprotection.



- 25. Use of a labeled conjugate as defined in claim 10, 11, 12, 13, 14, 15, 16 or 17 for in vivo imaging of amyloid deposits.
- 26. Use of a peptide of Formula I as defined in claim 1, 2, 3, 4, 5, 6, 7 or 8 for the manufacture of a medicament for inhibiting amyloidosis and/or for cytoprotection.
- 27. Use of an antifibrillogenic agent as defined in claim 1, 2, 3, 4, 5, 6, 7 or 8 for the manufacture of a medicament for inhibiting amyloidosis and/or for cytoprotection.
- 28. Use of a labeled conjugate as defined in claim 10, 11, 12, 13, 14, 15, 16 or 17 for the manufacture of a medicament for in vivo imaging of amyloid deposits.
- 29. A peptide, an isomer thereof, a retro or a retro-inverso isomer thereof or a peptidomimetic thereof, for use in inhibiting amyloidosis and/or for cytoprotection, said peptide having a sequence taken from the β -sheet region of an amyloid protein selected from the group consisting of IAPP and protease resistant prion protein.
- 30. Use of a peptide as defined in claim 29 for inhibiting amyloidosis and/or for cytoprotection.





- 32. A composition for inhibiting amyloidosis and/or for cytoprotection, which comprises a therapeutically effective amount of a peptide as defined in claim 31, 30 or 31 in association with a pharmaceutically acceptable carrier.
- 33. Use of a labeled peptide as defined in claim 29 for the manufacture of a medicament for in vivo imaging of amyloid deposits.
- 34. A process for the preparation of cells suitable for transplantation into a mammal, which cells are capable of forming amyloid deposits, said process comprising contacting the cells in vitro with the peptide of Formula I as defined in claim 1 or with the antifibrillogenic compound as defined in claim 1, 2, 3, 4, 5, 6, 7 or 8 for inhibiting amyloid deposit formation.
- 35. Process according to claim 34, wherein said peptide of Formula I or said antifibrillogenic compound causes breakdown of amyloid deposits, the deposits having been formed by said cells prior to said contact.
- 36. Process according to claim 34 or 35, in which the cells are cultured in the presence of the peptide of Formula I or the antifibrillogenic compound.

